

**In the Claims:**

Please enter the following amended claim set:

1.     **(currently amended)**     A method for measuring an evolution rate of carbon dioxide from a sample, the method comprising the steps of:

pre-incubating a sample in gas communication with a solution comprising an alkaline solution and a pH indicator by shaking the sample and the solution to enhance absorption of carbon dioxide dissolved in the solution;

permitting the alkaline solution to absorb carbon dioxide formed by the sample in an enclosed space;

following the pre-incubating step, determining from a change in the pH indicator a time increment at which an increment of the alkaline solution is substantially consumed by the carbon dioxide;

calculating from the time increment a carbon dioxide evolution rate.

2.     **(canceled)**

3.     **(currently amended)**     The method recited in Claim [[2]] 1, wherein the shaking step comprises shaking at a fixed rate.

4.     **(original)**     The method recited in Claim 1, wherein the alkaline solution comprises sodium hydroxide and barium chloride.

5.     **(original)**     The method recited in Claim 1, wherein the indicator comprises phenolphthalein.

6.     **(original)**     The method recited in Claim 5, wherein the indicator further comprises an ethanol solution.

7.     **(previously presented)**     The method recited in Claim 1, wherein the pre-incubating step comprises:

        a.     placing the sample in gas communication with a first amount of the solution comprising an alkaline solution and a pH indicator, the first amount sufficient to absorb the carbon dioxide formed during a predetermined amount of time;

        b.     permitting the alkaline solution to absorb the formed carbon dioxide in the enclosed space for the predetermined amount of time; and

        c.     withdrawing the alkaline solution to leave a predetermined portion in the reaction chamber following the step (a).

8.     **(previously presented)**     The method recited in Claim 7, wherein the withdrawing step comprises withdrawing substantially all of the solution.

9.     **(previously presented)**     The method recited in Claim 7, wherein step (a) comprises placing a sample in gas communication with a predetermined quantity of the alkaline solution and the portion comprises the predetermined quantity.

**10. (previously presented)** The method recited in Claim 1, wherein the pre-incubating step comprises injecting a predetermined quantity of the alkaline solution into the reaction chamber.

**11. (previously presented)** The method recited in Claim 10, further comprising the steps of:

repeating the pre-incubating, permitting, and determining steps a predetermined number of times; and

averaging the time increments from the repeated pre-incubating, permitting, and determining steps; and wherein

the calculating step comprises calculating from the averaged time increment a carbon dioxide evolution rate.

**12. (original)** The method recited in Claim 1, wherein the change in the pH indicator comprises a visualizable color change.

**13. (currently amended)** The method recited in Claim 1, wherein the calculating step comprises using the following equation:

$$\text{carbon dioxide evolution rate } (\mu\text{mol/h}) = (V \text{ } [0.1] \times 10^3 \times M/2)/[60t] \text{ } (t/60),$$

wherein  $M$  is the molarity of the alkaline concentration of the solution,  $V$  is a volume of the increment of the alkaline solution in milliliters, and  $t$  is the time increment in minutes.

**14. (withdrawn)** A device for measuring an evolution rate of a gas from a sample, the device comprising:

a sample vial having an opening into an interior space for containing a sample therein; and

a reaction chamber having an opening adapted for mating with the sample vial opening and a solution-receiving opening for receiving a solution comprising an alkaline solution and a pH indicator, the reaction chamber dimensioned for equilibrating the sample with a predetermined amount of the solution to attain a CO<sub>2</sub> absorption/evolution equilibrium between the alkaline solution and the sample.

**15. (withdrawn)** The device recited in Claim 14, wherein the sample vial has a threaded coupling adjacent the opening and the reaction chamber has a septum liner leading to the sample vial, the septum liner matable with the threaded coupling.

**16. (withdrawn)** The device recited in Claim 14, wherein the reaction chamber comprises a substantially transparent spherical member and the solution-receiving opening is adapted for receiving a syringe tip thereinto.

**17. (withdrawn)** A system for measuring an evolution rate of a gas from a sample, the system comprising:

a respirometer device comprising:

a sample vial having an opening into an interior space for containing a sample therein; and

a reaction chamber having a mixing opening adapted for mating with the sample vial opening and a solution-receiving opening for receiving a solution comprising an alkaline solution and a pH indicator, the reaction chamber dimensioned for equilibrating the sample with a predetermined amount of the alkaline solution; and

means for determining from a change in the pH indicator a time increment at which an increment of the alkaline solution is substantially consumed by the formed CO<sub>2</sub>.

**18. (withdrawn)** The system recited in Claim 17, further comprising means for shaking the sample and the solution to enhance carbon dioxide absorption.

**19. (withdrawn)** The system recited in Claim 18, wherein the shaking means comprises means for shaking at a fixed rate.

**20. (withdrawn)** The system recited in Claim 19, wherein the shaking means comprises an orbital shaker.

**21. (withdrawn)** The system recited in Claim 17, further comprising a syringe for injecting solution into the reaction chamber.

**22. (withdrawn)** The system recited in Claim 17, wherein the alkaline solution comprises sodium hydroxide and barium chloride.

**23. (withdrawn)** The system recited in Claim 17, wherein the indicator comprises phenolphthalein.

**24. (withdrawn)** The system recited in Claim 23, wherein the indicator further comprises an ethanol solution.

**25. (withdrawn)** The system recited in Claim 17, further comprising means for withdrawing at least some of the solution following a pre-equilibration period to leave a predetermined portion in the reaction chamber.